

FINDING OF NO SIGNIFICANT IMPACT
December 7, 2006

PROJECT: Belgrade, Montana, Water Infrastructure Improvements

TO: All Interested Government Agencies and the Public

As required by state and federal rules for determining whether an Environmental Impact Statement (EIS) is necessary, an Environmental Assessment (EA) has been performed on the above project. The EA meets the requirements of the National Environmental Policy Act (NEPA) and address the needs of the Environmental Protection Agency (EPA) grant for the project described below.

<u>PROJECT NUMBER:</u>	XP – 97834201-0 (EPA Grant No.) PCA #W9128F-06-3-0005 (WRDA Grant No.)
<u>EPA GRANT:</u>	\$ 716,800
<u>WRDA GRANT:</u>	\$ 125,000
<u>LOCAL FUNDS:</u>	\$ 868,200
<u>TOTAL COST:</u>	\$1,710,000

ABSTRACT: The city of Belgrade water system provides potable water to a population exceeding 5,700. In order to accommodate a growing population and an expanded service area, the city is undertaking improvements to its water supply, storage and delivery systems. The city's 2000 Water System Analysis recommends improvements with estimated capital costs of \$2.36 million for water supply, \$4.29 million for the existing distribution system and \$669,000 for the existing storage reservoirs. In 2002 one additional municipal well was constructed south of Interstate 15 to increase system pressure and flow. The city has also annexed approximately 114 acres of property south of Interstate 90. City water and sewer service will be extended to this area. As part of the recommendations of the amended Water System Analysis, the construction of a second 500,000-gallon elevated water storage reservoir was recommended.

The city of Belgrade's top water system priority is to add an elevated water storage tank adjacent to the new well and pumphouse constructed in 2002. This project is needed to improve system pressure in the southern part of town and increase public safety through added fire flows. The proposed water system improvements will enable the city to maintain compliance with the Safe Drinking Water Act. This environmental assessment will address the new elevated storage tank project only.

The project will be funded through a combination of federal State and Tribal Assistance Grant (STAG), Water Resource Development Acts (WRDA) grant and local funds.

Environmentally sensitive characteristics such as wetlands, floodplains, threatened or endangered species, and historical sites are not expected to be adversely impacted as a result of the proposed project. No significant long-term environmental impacts were

identified. Public participation during the planning process demonstrated support for the selected alternative. An environmental assessment (EA), which describes the project and analyzes the impacts in more detail, is attached to this Finding of No Significant Impact. This EA indicates that there will be no significant environmental impacts from the project. Based on the EA and the supporting Water System Analysis, a preliminary decision not to prepare an Environmental Impact Statement (EIS) has been made. Public review of the EA is available at the following locations:

Department of Environmental Quality
State Revolving Fund Loan Program
1520 East Sixth Avenue
Helena, MT 59620-0901

Belgrade City Hall
91 East Central Avenue
Belgrade, MT 59714

Comments regarding this proposed project or its associated EA must be submitted to the Montana Department of Environmental Quality (MDEQ) at the following address:

Montana DEQ
Technical & Financial Assistance Bureau
State Revolving Fund Loan Program
P.O. Box 200901
Helena, MT 59620-0901

The Montana DEQ will review all comments received. After evaluating the comments, the Agencies will make a final decision whether or not to prepare an EIS or recommend project changes. No administrative action will be taken on the project for at least 30 calendar days after release of the Finding of No Significant Impact. This public comment and review is part of both the National Environmental Policy Act (NEPA) and the Montana Environmental Policy Act (MEPA) requirements.

Sincerely yours,

Todd Teegarden, Bureau Chief
Technical & Financial Assistance Bureau
Planning Prevention & Assistance Division
Montana Department of Environmental Quality

Environmentally sensitive characteristics such as wetlands, floodplains, threatened or endangered species, and historical sites are not expected to be adversely impacted as a result of the proposed project. No significant long-term environmental impacts were identified. Public participation during the planning process demonstrated support for the selected alternative. An environmental assessment (EA), which describes the project and analyzes the impacts in more detail, is attached to this Finding of No Significant Impact. This EA indicates that there will be no significant environmental impacts from the project. Based on the EA, and the supporting PER, a preliminary decision not to prepare an Environmental Impact Statement (EIS) had been made. Public review of the EA is available at the following locations:

Montana DEQ
1520 East Sixth Avenue
PO Box 200901
Helena, MT 59620-0901

US EPA
Region 8, Montana Office
10 West 15th Street - Suite 3200
Helena, MT 59626

Comments supporting or disagreeing with this decision may be submitted for consideration by the EPA, to:

Jay Sinnott
US EPA, Region 8, Montana Office
10 West 15th Street - Suite 3200
Helena, MT 59626

After evaluating the comments received, EPA will make a final decision. No administrative action will be taken on the project for at least 30 calendar days after release of the Finding of No Significant Impact.

Sincerely yours,

Robert E. Roberts
Regional Administrator

Impacts to environmentally sensitive characteristics such as classified land use, cultural resources, wetlands, floodplains, threatened or endangered species, and water quality were considered. None of these environments are expected to be adversely impacted as a result of the proposed project.

The review process did not indicate that significant environmental impacts would result from the proposed action. Consequently, a preliminary decision not to prepare an EIS has been made. This action is taken on the basis of careful review of the engineering report, environmental information documents, and other supporting documentation. An environmental assessment which describes the project and specifically analyzes its impacts is attached to this Finding of No Significant Impact. These documents are available for public review at the following locations:

Montana DEQ
1520 East Sixth Avenue
PO Box 200901
Helena, MT 59620-0901

US EPA
Region 8, Montana Office
10 West 15th Street - Suite 3200
Helena, MT 59626

Comments supporting or disagreeing with this decision may be submitted for consideration by the EPA, to:

David Rise
US EPA, Region 8, Montana Office
10 West 15th Street - Suite 3200
Helena, MT 59626

After evaluating the comments received, EPA will make a final decision. No administrative action will be taken on the project for at least 30 calendar days after release of the Finding of No Significant Impact.

Sincerely,

Kerrigan G. Clough
Deputy Regional Administrator

CITY OF BELGRADE
ELEVATED WATER STORAGE TANK

ENVIRONMENTAL ASSESSMENT

I. COVER SHEET

A. PROJECT IDENTIFICATION

Applicant: City of Belgrade
Address: 91 East Central Avenue
Belgrade, MT 59714
Project Number: STAG No. XP-97834201-0
PCA Contract #W9128F-06-3-0005

B. CONTACT PERSON

Name: Joseph Menicucci, City Manager
City of Belgrade
Address: 91 East Central Avenue
Belgrade, MT 59714
Telephone: (406) 388-3760

C. ABSTRACT

The city of Belgrade water system provides potable water to a population exceeding 5,700. In order to accommodate a growing population and an expanded service area, the city is undertaking improvements to its water supply, storage and delivery systems. The city's 2000 Water System Analysis recommends improvements with estimated capital costs of \$2.36 million for water supply, \$4.29 million for the existing distribution system and \$669,000 for the existing storage reservoirs. In 2002 one additional municipal well was constructed south of Interstate 15 to increase system pressure and flow. The city has also annexed approximately 114 acres of property south of Interstate 90. City water and sewer service will be extended to this area. As part of the recommendations of the amended Water System Analysis, the construction of a second 500,000-gallon elevated water storage reservoir was recommended.

The city of Belgrade's top water system priority is to add an elevated water storage tank adjacent to the new well and pumphouse constructed in 2002. This project is needed to improve system pressure in the southern part of town and increase public safety through added fire flows. The proposed water system improvements will enable the city to maintain compliance with the Safe Drinking Water Act. This environmental assessment will address the new elevated storage

tank project only.

The project will be funded through a combination of federal State and Tribal Assistance Grant (STAG), Water Resource Development Acts (WRDA) grant and local funds. Environmentally sensitive characteristics such as wetlands, floodplains and threatened or endangered species are not expected to be adversely impacted as a consequence of the proposed project. No significant long-term environmental impacts were identified.

Under Montana law (75-6-112, MCA), no person, including a municipality or county, may construct, extend, or use a public sewage system until the DEQ has reviewed and approved the plans and specifications for the project.

D. COMMENT PERIOD

Thirty (30) calendar days.

II. PURPOSE AND NEED FOR ACTION

Public health and safety issues, as well as future growth issues, are the driving factors in choosing the action alternatives for City of Belgrade water system improvements. The 2000 Water System Analysis identified the following needs for the Belgrade water system:

1. The city of Belgrade is experiencing considerable growth both within the existing city limits and directly outside its borders. The population is steadily increasing. Indications are that the growth will continue.
2. Even at the existing population, the City's water system does not provide adequate fire protection during peak demand conditions. Storage facilities empty during periods of peak usage.
3. Development will require expansion of the system. Careful planning is important to ensure the system can handle additional demands.

A. EXISTING WATER STORAGE SYSTEM

Belgrade's current water system includes a 500,000 gallon elevated storage tank manufactured by the Pittsburgh-Des Moines Steel Company and constructed in 1976. The diameter is 56 feet and the base is 112.0 feet above existing ground elevation. The overflow height is 29.85 feet above the base of the bowl. The tank is located in the southeast quadrant of the city.

Montana Department of Environmental Quality, Circular WQB 1 requires that storage facilities have sufficient capacity to meet fire flow demands, where fire protection is provided, in addition to domestic demands. The existing storage does not meet this criterion. Belgrade's 500,000 gallons of storage and the 1150 gpm well with auxiliary power will provide a 1663 gpm, 3-hour fire flow while meeting domestic needs. This will not satisfy the ISO rating for schools (3000 gpm) or business districts (2500 gpm).

B. PROPOSED PROJECT

The proposed project includes the following improvements:

1. Construction of a 500,000-gallon elevated water storage reservoir with all associated electrical and control appurtenances.
2. Construction of 190 feet of new 16-inch transmission main with connection to the existing 12-inch water distribution main.

Proper water pressure and storage capacity is essential for the protection of public health and safety. By adding a new 500,000-gallon elevated water storage reservoir, in addition to new water supply wells, adequate water will continue to be delivered to the users of the system and public health and safety with respect to the water supply will be improved.

III. ALTERNATIVES INCLUDING THE PROPOSED ACTION

A. CITY WATER SUPPLY / STORAGE ALTERNATIVES

Three alternatives for addressing the city's long-term water needs were considered:

Alternative No. 1: Continued Use of Existing Facilities (No Action)

This alternative relies on the existing water system to meet current and future requirement for system pressure, domestic flows, and fire flows. As discussed the current system is unable to meet the current or future demands of the system and will not be considered further.

Alternative 2: Additional storage reservoir and additional water supply

The design basis of this alternative is the desire to meet the required fire flow of 3,000 gallons per minute for 3 hours plus the estimated design year domestic flow requirements (2020).

$$\text{Storage fire flow: } \frac{3,000 \text{ gal}}{\text{min}} * 3 \text{ hr} * \frac{60 \text{ min}}{1 \text{ hr}} = 540,000 \text{ gals}$$

$$\begin{array}{rcl} \text{Operational capacity:} & & 460,000 \text{ gals} \\ \text{@ year 2020} & & \\ \text{(Dimensionless demand} & & \\ \text{curve applied to peak day)} & & \hline & & 1,000,000 \text{ gals} \end{array}$$

Therefore 1,000,000 gallons of storage will provide fire flow and operational capacity until year 2020. This tank size does not include any emergency reserve.

The water source will need to supply the peak day demand volume in 24 hours. Table 1 provides supply/demand data for the peak day.

Table 1.

Year	Peak Day Demand	Well Supply	Required Well Supply
2000	2440 gpm	2800 gpm	3200 gpm *
2020	4265 gpm	4300 gpm	4300 gpm *

* The required well supply represents Peak Hour Demand to meet both domestic and fire protection needs.

Currently, Belgrade has no operational capacity in the existing 500,000-gallon reservoir and therefore the wells must attempt to supply the peak hour demand. Fire flow reserve is slowly drained during the summer months.

Adding 500,000 gallons of storage and 1500 gpm of new water supply or approximately two wells will maintain the fire flow reserve and provide domestic demands to 2020. **This is the selected alternative.** A new well was installed in 2002 and the construction of an elevated storage tank will complete this project.

Alternative 3: Additional water supply only

Belgrade can use groundwater as supplemental fire reserve to the existing 500,000-gallon tank. Additional wells will be necessary to meet system needs under this alternative.

The water source will need to supply the peak day demand and fire protection needs. Table 1 provides supply/demand data for the peak day under this alternative.

Because there is no operational capacity in the existing tank, Belgrade's wells will have to supply the Peak Hour flow so the fire flow reserve in the existing tank is not drained. In addition, one well must have an auxiliary power supply to help supplement the 500,000-gallon tank to achieve the 540,000 gallons of fire flow reserve. Currently, one existing well does have an auxiliary power supply.

Because the storage tank does not have any operational capacity, peak hour demand must be supplied. This results in 2750 gpm of new water supply, or approximately 4 new wells to provide for fire protection and domestic demands to 2020. This alternative requires one well to have auxiliary power.

B. COST/BENEFIT COMPARISONS

Table 6-1 provides projected costs for a new well. Although the new well may require disinfection, the cost of the disinfection system is not included in the estimate provided in Table 6-1.

Table 6-1 New Well Construction Cost Estimate

Item	Quantity	Unit Price		Total Price
16" Drilling & Surface Casing	45	\$60	VF	\$2,700
12" Drilling	270	\$45	VF	\$12,150
12" Stainless Steel Screen	40	\$125	VF	\$5,000
Development & Pump Tests	1	\$8,000	LS	\$8,000
12" Well Casing	140	\$25	VF	\$3,500
Wellhouse, Well Pump, Chlorination, & Mechanical Equipment	1	\$80,000	LS	\$80,000
Well Connection Piping & Blowoff	1	\$10,000	LS	\$10,000
Pitless Adapter, Disinfect & Misc.	1	\$7,500	LS	\$7,500
Auxiliary Power Generator	1	\$45,000	LS	\$45,000
Land Cost	1	\$50,000	LS	\$50,000
10% for Access Road Sitework, etc.				\$18,600
20% for Miscellaneous Items				\$50,000
15% Project Contingency				\$44,900
Estimated Construction Cost				\$337,350
Engineering Fees				\$50,650
TOTAL PROJECT ESTIMATE				\$388,000

Note: Costs based on 2000 cost figures.

The probable cost to construct a new elevated storage reservoir is provided in Table 6-2.

Table 6-2. New Elevated Steel Water Storage Reservoir Cost Estimate

Item	Quantity	Unit Price	Total Price
500,000 Gal. Elevated Steel Tank, Tank Connection Piping, Site work and fencing (2006 Engineers Estimate)	1 LS	\$1,581,000.00	\$1,581,000
Engineering			\$99,000
Total Project Estimate			\$1,680,000

Alternative 2 would require the installation of one new municipal well and the construction of one 500,000-gallon elevated steel water storage tank. Estimated cost of this project would be \$388,000 for the well plus \$1,680,000 for the new tank or \$2,068,000. **This is the preferred alternative.** The City of Belgrade has completed the installation of one new municipal well and is moving forward with completing the project by constructing a new elevated water tank in 2006-2007.

Alternative 3 would require the installation of at least two new wells for a total cost of \$776,000. Though less expensive, this alternative was not selected by the city of Belgrade due to its inability to meet the pressure and flow requirements during periods of high demand or during periods of power outages.

C. TOTAL ESTIMATED COSTS and FUNDING COMMITMENTS

The total estimated construction cost of the proposed project is \$1,710,000.00. The City has received a STAG of \$716,800 from the EPA and a WRDA Grant of \$125,000.00 from the Army Corps of Engineers. The 45 percent local match requirement will come from the city water fund. No water rate increases are anticipated as a direct result of this project.

IV. AFFECTED ENVIRONMENT

A. PLANNING AREA

The planning area is located in the Gallatin Valley in southwestern Montana. The area includes lands on all sides of the city of Belgrade, with the majority of area located north of Interstate 90. The proposed location of the elevated water storage tank is in the southern portion of the city south of I-90. The tank will site adjacent to the existing City Well No. 6. This location is fully fenced and the property is owned by the city. The proposed project consists of constructing a 500,000-gallon elevated

storage reservoir and connecting it to the existing distribution system with 190 feet of 16-inch transmission line. Construction of the new tank is expected to take approximately 6 months to complete.

B. FLOW PROJECTIONS

Table 5-2 presents the design demand projections for the Belgrade water system. The projections are based on the current flow characteristics and population projections.

Table 5.2 Projected System Demand

AVERAGE DAY - 242 gpcd (based on average pumped volume 1996-99)
 PEAK DAY USAGE - 610 gpcd (based on peak day pumped volume 1999)

Year	Pop	Avg. Day based on pumped volume	Peak Day based on pumped volume	Avg. Day 24 hr pumping rate gpm	Peak Day 24 hr pumping rate gpm
2000	5,568	1,347,456	3,396,480	936	2,359
2005	6,692	1,619,464	4,082,120	1,125	2,835
2010	7,817	1,891,714	4,768,370	1,314	3,311
2015	8,941	2,163,722	5,454,010	1,503	3,788
2020	10,065	2,435,730	6,139,650	1,691	4,264

* The Peak Day 24-hr pumping rate represents the continuous pumping rate necessary to meet projected domestic demand.

Table 5.2 projects demand according to the current per capita demand on the pumps.

C. NATURAL FEATURES

The terrain is generally flat within the planning area with the overall slope to the north-northwest of about 1.5 percent. Significant features include gravel pits west and southwest of the city, Gallatin Field Airport near the eastern edge of the planning boundary, and Interstate 90 through the south half of the planning area.

Soils in the area are Beaverell which is a highly permeable soil consisting of stratified, very gravelly loamy sand and extremely gravelly coarse sand, and Beavway, which is also highly permeable and consists of extremely cobbly loamy sand and very gravelly coarse sand.

The depth to groundwater in the area is typically greater than ten feet with pockets that are between six and ten feet. The aquifer in the area is unconfined and is dominated by gravel and sand. The aquifer generally has a depth of 50 feet or more with a hydraulic gradient of between 0.0023 and 0.0034 ft/ft and a groundwater flow direction of north-northwest.

Climate in the planning area is typical of southwestern Montana. Average annual precipitation is 13.83 inches. The wettest months are typically May and June. The driest months are usually November through February. Annual average lake evaporation rate is 34.69 inches.

The majority of the land use within the planning area, as defined by a zoning plan, will be agricultural/suburban and public lands/institutional. Existing and planned commercial/industrial development includes approximately 25% of the land area. Residential development, both planned and existing, covers the remaining 17% of the land area.

None of the project area lies within the 100-year or 500-year floodplains, as defined by the Federal Emergency Management Agency maps.

The U.S. Fish & Wildlife Service identifies seven species in Montana as endangered and eight species as threatened. The endangered animal species include the whooping crane, Eskimo curlew, black-footed ferret, pallid sturgeon, white sturgeon, least tern and gray wolf. Threatened animal species in the state include the grizzly bear, bald eagle, Canada lynx, piping plover and bull trout. Threatened plant species are the Spalding's catch-fly, water howellia and Ute Ladies'-tresses. Additionally, three animal species, the warm springs beetle, yellow-billed cuckoo and arctic grayling, and one plant species, the slender moonwort, are listed as candidate species for a threatened or endangered designation.

All construction will take place on the site of the existing City Well No. 6 with its associated pumphouse and transmission line. No native vegetation is expected to be disturbed by the construction. Similarly, the site does not provide prime habitat for wildlife, and as a result no impacts on wildlife are anticipated.

V. ENVIRONMENTAL IMPACTS OF PROPOSED PROJECT

A. DIRECT AND INDIRECT ENVIRONMENTAL IMPACTS

1. Housing and Commercial Development – Developed land use within the city limits is a mix of residential, commercial and light industrial. Although intended to accommodate anticipated growth, the proposed improvements are not expected to have an impact on housing and commercial development.
2. Future Land Use – Land use within and surrounding the city limits is changing as agricultural and vacant properties are developed for residential and commercial use. No adverse impacts to land use are expected from the proposed project.

3. Floodplains and Wetlands – None of the project area lies within the 100-year or 500-year floodplains. No wetlands have been identified on the proposed construction site.
4. Cultural Resources – Since the construction site is previously-disturbed land, there is a low probability that cultural properties will be impacted. A cultural resource inventory was not conducted. The state Historic Preservation Office will be immediately contacted in the event any cultural resources are identified during construction.
5. Fish and Wildlife – No impacts on biological resources in the area are anticipated by the proposed project.
6. Water Quality – Impacts on water quality are expected to be minor and short-term. Short-term impacts on water quality can be controlled through proper construction practices.
7. Air Quality - Short-term negative impacts on air quality may occur from heavy equipment, dust and exhaust fumes during project construction. Proper construction practices and dust abatement measures will be implemented during construction to control dust, thus minimizing this problem.
8. Public Health – The proposed project is not expected to have adverse impacts on public health, and should instead enhance public health by upgrading water storage and supply facilities.
9. Energy - During construction of the proposed project, additional energy will be consumed, causing a direct short-term impact on this resource.
10. Noise - Short-term impacts from increased noise levels may occur during construction of the proposed project improvements. Construction activities are anticipated to last no more than twelve months and will occur only during daylight hours.

B. UNAVOIDABLE ADVERSE IMPACTS

Short-term construction-related impacts, such as noise, dust and traffic disruption, will occur but can be minimized through proper construction management. Energy consumption during construction cannot be avoided.

VI. PUBLIC PARTICIPATION

The proposed project was discussed at public meetings held by the city on June 19, 2006. No substantive negative public comments regarding the proposed project were received.

VII. REFERENCE DOCUMENTS

The following documents were used in the environmental review of this project and are considered to be part of the project file:

- A. 2000 Belgrade Water System Analysis, prepared for the city of Belgrade by Morrison Maierle, Inc., Bozeman, Montana.
- B. Elevated Water Storage Tank Design Report, May 2006, prepared for the city of Belgrade by Thomas Dean and Hoskins, Inc., Great Falls, Montana.
- C. Belgrade Wastewater System Environmental Assessment, prepared by city Staff and Thomas Dean and Hoskins, Inc., Great Falls, Montana.

VIII. RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS

☐ EIS ☐ More Detailed EA ☒ No Further Analysis

Rationale for Recommendation: Through this EA, The Montana DEQ has verified that none of the adverse impacts of the city of Belgrade elevated water storage project are significant. Therefore, an environmental impact statement is not required. The environmental review was conducted in accordance with the Administrative Rules of Montana (ARM) 17.4.607 through 17.4.610.

EA Prepared By:

Robert Ashton

Date

EA Reviewed By:

Gary Wiens, P.E.

Date